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ABSTRACT

A study was conducted at the Bronx Community College to: (1) test the hypothesis that instructors' knowledge of their ratings by students and of their relative standing among their colleagues in terms of these ratings is sufficient tc produce a significant change in ratings over time; and (2) correlate the effects of instructor age, sex, tenure status, and rank, as well as knowledge of relative standing, on changes in student ratings over time. Data collected on a 13-item student evaluation of instruction form were analyzed for ten departments for Spring 1973, Fall 1973, and Fall 1975. Instructors in five departments were advised of their mean ratings for all of the sections they taught on each of the items on the rating scale and were informed of the mean ratings on each item for their respective departments. Instructors in the remaining five departments were given their own ratings and not the departmental means. Step-wise regression analyses were used to determine the relationships between the change in Spring 1973, Fall 1973, and Fall 1975 ratings and the five independent variables (sex, age, rank, tenure, and knowledge of relative standing). Findings indicate that none of the independent variables significantly accounted for variance in ratings after one semester or after the two-year period. (JP)

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Effects of interactions between four instructor status conditions and instructor knowledge of, and deviation from, departmental norms, on changes in student ratings of instruction at a large, urban community college.

For presentation at the Annual Meeting of the American Educational Research Association, Boston, April 10, 1980.

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Effects of interactions between four instructor status conditions and instructor knowledge of, and deviation from, departmental norms, on changes in student ratings of instruction at a large, urban community college.

A. Purpose

The purpose of this study was to examine the effects of the interaction of instructor rank, tenure status, age, and sex, with instructor knowledge of, and deviation from, departmental norms, on changes in ratings received by instructors from their students. For example, with respect to rank, the question to be answered was: Does an instructor's rank make any difference in the amount of change observed in student ratings as a function of the instructor's knowledge of his departmental norm and his deviation from that norm? Corresponding questions were asked with respect to tenure status, age, and sex. It was felt that positive findings of interaction would help explain inconsistencies in recent results of studies investigating effects of knowledge of rating norms, and deviations from these norms, on instructor ratings. A secondary objective was to determine the effects of extending the period between initial and criterion ratings, on the latter.

B. Perspective

Research on student ratings of instruction has taken three primary directions: a)studies of reliability and a broad range of conditions affecting student ratings, b)studies of validity (i.e., the relationship between ratings and other measures of instructional effectiveness and student achievement), and c)studies of how to optimally utilize and apply student ratings for the improvement of instruction.

There is a wealth of studies in the first two categories. However, the area which has received least attention, and to which this study belongs, concerns the utilization of feedback of rating results for the purpose of improving instruction. Reports of the effectiveness of feed-back in producing changes in instructor ratings (without necessary reference to changes in instructor behavior or effectiveness) have been contradictory. Miller (1971) found positive change in only one of three classes; Bultman (1972) found feedback did not produce any change in instructor ratings; Oles and Lencoski (1973) found change that was opposite of what was expected. However, Centra (1973a, 1973b), Braunstein, Klein, and Pachla (1973), Pambookian (1974), and Rous, et.al (1966), noted some positive changes in ratings following feedback. Several authors maintain that some kind of norm or comparative data should be provided if feedback is to be effective (Centra, 1973b; Kerlinger, 1971; Yonge and Sassenrath, 1968), but the evidence is not definitive.

Rotem and Glasman (1979) have provided a comprehensive survey of the effectiveness of students' evaluative feedback to university instructors in influencing instructor performance. They examined approximately seventy documents and reports on feedback effects from the points of view of institutional level of instruction, instructor perception of student rating reliability and validity, the source of rating (administrators, supervisors, principals, students), the specificity and provocativeness of the feedback, student and instructor rating discrepancy, theory vs. non theory based teaching, instructor personality and demographic characteristics, feedback interval, and the importance of teaching for institutional purposes.

These authors report only two studies which bear (but only partially), on the central questions of this investigation. In the case of the effect of instructor age on response to feedback it was found that the "significant results that occurred due to feedback did not appear to vary with...age and teaching experience" (Daw and Gage, 1967). In a study by Centra (1973) differences in feedback effects could not be related to variations in instructor sex or teaching experience. With regard to interval effect, Daw and Gage (1967) varied the length of the interval systematically but did not find a significant effect, while Centra (1973) was able to report such an effect. However, in the latter case it was not clear whether it was the interval, additional feedback, or both, which contributed to the significant effect found.

C. Hypotheses

This study hypothesizes that failure to consider interactions between aspects of instructor status (sex, age, rank, tenure) and knowledge of normative data, and between instructor status and instructor deviation from norms, may account for the lack of more definitive or consistent findings.[1]

Therefore, four primary sets of questions were explored, as follows:

a) Do male and female instructors change differentially in ratings under conditions of knowledge or no knowledge of norms, and whether they are above or below their respective departmental means?

b) Do instructors of different rank change differentially in ratings under conditions of knowledge or no knowledge of norms, and whether they are above or below their respective departmental means?

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[1] While age, rank, and tenure may appear to be confounded, the actual correlations among these three independent variables for a "typical" set of data were found to be: rank vs. age, +.45; tenure vs. age, +.22; tenure vs. rank, +.37. All correlations with sex were below .20. Thus, only a limited degree of confounding is seen.

c) Do tenured and untenured instructors change differentially in ratings under conditions of knowledge or no knowledge of norms, and whether they are above or below their respective departmental means?

d) Do older and younger instructors change differentially in ratings under conditions of knowledge or no knowledge of norms, and whether they are above or below their respective departmental means?

e) Will any of the above results depend on the interval between original and criterion ratings (from one to five semesters)?

D. Method

At the end of the Spring 1973 semester a thirteen item, five point student evaluation of instruction rating scale (0-4) was used for the first time, involving the entire faculty. The data used in this study came from 155 instructors (of all ranks) in ten departments. Instructors in five of the departments were given their mean ratings (over all sections taught that semester) for each of the thirteen items on the rating scale, along with the mean rating on each item for their respective departments. Instructors in the remaining five departments were given only their own ratings and not the departmental item means.[1] This defined the Knowledge vs. No Knowledge (of norms) groups. Additionally, a mean rating over all thirteen items was computed for each instructor, and for the department as a whole, in the five departments for which departmental norms were made available to department members. Instructors (N=86) were then assigned to one of three groups, according to the degree and direction of deviation from their departmental mean rating (.2 rating points below or above the departmental mean, and the group between these limits). Criterion ratings were obtained for all faculty in Fall 1973 (one semester interval) and in Fall 1975 (five semester interval), on the same instrument.

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[1] Departments selected their own feedback condition.

The data were first analysed by utilizing the step-wise multiple regression program of the S.P.S.S. package. Relationships between change in ratings over one semester and the independent variables (sex, age, rank, tenure, Knowledge of Norms), and the interactions between the first four and the last, were computed by using the Fall 1973 ratings as the dependent variable, then forcing into the analysis the Spring 1973 ratings, followed by freedom of entry into the analysis of all remaining independent variables, including interactions. The forcing into the analysis of the Spring 1973 ratings as the first step leaves residual ratings independent of the Spring 1973 ratings. The remaining or residual variance, therefore, may be considered as "change" variance.

Next, the above procedure was repeated using the Fall 1975 ratings as the dependent variable, retaining the Spring 1973 ratings as the first independent or "control" variable, and this entire two-step process was then replicated after substituting the Below Mean - Above Mean predictor (and its corresponding interactions) for the Knowledge of Norms predictor. Change in faculty rank and status were also used as predictor variables for the analysis of effects over the 1973 to 1975 period. In all, four separate regression analyses were processed. (In actual practice some interactions and, in some cases, main effect variables, were omitted from the final analysis when preliminary analyses indicated that they could contribute very little to the explained criterion variance.)

E. Results

Table 1 give the "pre" and "post" condition rating means and standard deviations for the undifferentiated groups involved in the four analyses.

E. Results

Table 1. Rating Means and Standard Deviations

Condition	N	Mean	S.D.
Knowledge vs. No Knowledge			
Spring 1973	155	3.32	.32
Fall 1973	155	3.35	.32
Knowledge vs. No Knowledge			
Spring 1973	153	3.35	.31
Fall 1975	153	3.33	.33
Knowledge of Relative Standing			
Spring 1973	89	3.37	.34
Fall 1973	89	3.35	.36
Knowledge of Relative Standing			
Spring 1973	86	3.38	.34
Fall 1975	86	3.36	.36

In view of the fact that, as will be shown in the following paragraphs, none of the "main effect" predictors (age, sex, tenure, rank, knowledge vs. no knowledge, and relative standing) contributed to the prediction of residual rating variance, it was felt that further tables detailing means and standard deviations of subgroups (i.e., males vs. females) were unnecessary.

The major results of the study are summarized in the following four sections:

1. Effect of Knowledge vs. No Knowledge of Norms after one semester (Fall 1973).

After forcing into the equation the Spring 1973 ratings as the first step in the step-wise analysis it was found that 67% of the Fall 1973 rating variance remained unaccounted for. The first freely selected independent variable accounting

for the next largest amount of residual variance was the Sex x Knowledge vs. No Knowledge interaction. This variable added 3% (F=8.17) to the explained variance of the Fall 1975 ratings, producing a multiple R of .60, and an R^2 of .36. All subsequent entries of predictor variables reduced the remaining unaccounted for residual variance by insignificant amounts.

Examination of the interaction effect indicated that under the condition of No Knowledge of Norms, male and female instructors show no difference in their tendencies to improve their ratings after one semester, while under the condition of Knowledge of Norms, females show a stronger tendency to improve their ratings than males, after one semester.

2. Effect of Knowledge vs. No Knowledge of Norms after five semesters (Fall 1975).

After forcing into the equation the Spring 1973 ratings it was found that 63% of the Fall 1975 rating variance remained unaccounted for. The first freely selected independent variable accounting for the next largest amount of residual variance accounted for less than one percent of the residual variance (F=1.60). Thus none of the "main effect" variables (sex, age, rank, tenure, knowledge of norms) or the interactions tested could account for any significant amount of residual rating variance in this analysis.

3. Effect of Deviation from Departmental Norm, after one semester (Fall 1973).

After forcing into the equation the Spring 1973 ratings it was found that 65% of the Fall 1973 rating variance remained unaccounted for. The first freely selected independent variable accounting for the next largest amount of residual variance

accounted for an additional 2% of the residual variance (F=3.06). Thus, none of the "main effect" variables or the interactions tested could account for any significant amount of residual rating variance in this analysis.

4. Effect of Deviation from Departmental Norm, after five semesters (Fall 1975).

After forcing into the equation the Spring 1973 ratings it was found that 58% of the Fall 1975 rating variance remained unaccounted for. The first freely selected independent variable accounting for the next largest amount of residual variance accounted for only an additional 1% of the residual variance (F=1.37). Thus, none of the "main effect" variables or the interactions tested could account for any significant amount of residual rating variance in this analysis.

F. Discussion & Conclusions

This study strongly suggests that the mere knowledge by instructors of their student ratings, or even of their relative standing among colleagues within their own departments, is insufficient to produce any noticeable change in ratings after one semester, or after a two year period. Even when instructors are differentiated on the basis of age, sex, tenure status, and rank, the conditions of knowledge of results and knowledge of relative standing still do not make any significant difference. If, therefore, feedback per se is to be justifiably used in a program of faculty development, it will be necessary to find other mediating factors and feedback conditions demonstrating the effectiveness of feedback.

One direction may lie in the type of item or the type of information which is reported back to the instructor. Items which are of a general nature and which do not suggest specific behaviors amenable to change may be ineffective in yielding rating improvements, or instructors may need assistance in making changes suggested by student evaluations. For example, the first item in our instrument calls for the student to rate the extent to which the instructor prepares and organizes instructional activities. If found deficient on this item, what specifically should the instructor do?

Another direction may lie in removing instructor resistance to the idea of being evaluated by students along dimensions which the instructor may feel do not bear an important relationship to the instructor's own goals or instructional philosophy. Perhaps all instructors should not be assessed by the same instrument, even within a given department. An approach to individualized student ratings of instruction has been developed at Purdue University and it will be interesting to see whether instructors use the opportunity in ways which will further their development or will merely reinforce their own views of themselves as teachers.

The latter observation leads to the important consideration of the dynamics among situational-attitudinal-personality factors. What kind of instructors, in what kinds of situations, will be most likely to respond to student evaluations as compared to other kinds of instructors? One dynamic which may have already been identified in this regard is the discrepancy between the instructor's self perception as an instructor as contrasted to the view presented by the students

through their ratings. Instructor attitudes toward students, the perceived role of the instructor, administrative use of student ratings, and certain personality traits as may be identified by such an instrument as, for example, the Jackson Personality Research Form, may also contribute to the identification of rating changes resulting from feedback. And while only minor evidence for the significance of interactions was found in the current study, it is recommended that interactions continue to be investigated as a possible source of rating change variance.

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